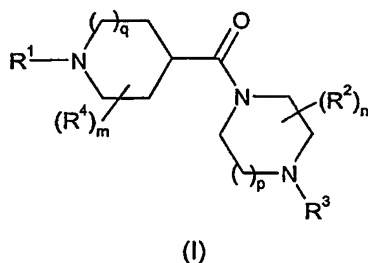


CLAIMS

1. A compound of formula (I) or a pharmaceutically acceptable salt thereof:



wherein:

- R¹ represents aryl, heteroaryl, -aryl-X-C₃₋₇ cycloalkyl, -heteroaryl-X-C₃₋₇ cycloalkyl, -aryl-X-aryl, -aryl-X-heteroaryl, -aryl-X-heterocyclyl, -heteroaryl-X-heteroaryl, -heteroaryl-X-aryl or -heteroaryl-X-heterocyclyl;
- wherein said aryl, heteroaryl and heterocyclyl groups of R¹ may be optionally substituted by one or more (eg. 1, 2 or 3) substituents which may be the same or different, and which are selected from the group consisting of halogen, hydroxy, cyano, nitro, oxo, haloC₁₋₆ alkyl, polyhaloC₁₋₆ alkyl, haloC₁₋₆ alkoxy, polyhaloC₁₋₆ alkoxy, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₆ alkylthio, C₁₋₆ alkoxyC₁₋₆ alkyl, C₃₋₇ cycloalkylC₁₋₆ alkoxy, -COC₁₋₆ alkyl, -COC₁₋₆ alkyl-halogen, -COC₁₋₆ alkyl-cyano, C₁₋₆ alkoxycarbonyl, C₁₋₆ alkylsulfonyl, C₁₋₆ alkylsulfinyl, C₁₋₆ alkylsulfonyloxy, C₁₋₆ alkylsulfonylC₁₋₆ alkyl, C₁₋₆ alkylsulfonamidoC₁₋₆ alkyl, C₁₋₆ alkylamidoC₁₋₆ alkyl, aryl, arylsulfonyl, arylsulfonyloxy, aryloxy, arylsulfonamido, arylcarboxamido, aroyl, or a group NR¹⁵R¹⁶, -CONR¹⁵R¹⁶, -NR¹⁵COR¹⁶, -C(R¹⁵)=NOR¹⁶, -NR¹⁵SO₂R¹⁶ or -SO₂NR¹⁵R¹⁶, wherein R¹⁵ and R¹⁶ independently represent hydrogen or C₁₋₆ alkyl or together form a heterocyclic ring;
- X represents a bond, O, CO, SO₂, OCH₂ or CH₂O;
- each R² and R⁴ independently represents C₁₋₄ alkyl;
- R³ represents C₃₋₈ alkyl, C₃₋₆ alkenyl, C₃₋₆ alkynyl, C₃₋₆ cycloalkyl, C₅₋₆ cycloalkenyl or -C₁₋₄alkyl-C₃₋₆ cycloalkyl;
- wherein said C₃₋₆ cycloalkyl groups of R³ may be optionally substituted by one or more (eg. 1, 2 or 3) substituents which may be the same or different, and which are selected from the group consisting of halogen, C₁₋₄ alkyl or trifluoromethyl groups;
- m and n independently represent 0, 1 or 2;
- p and q independently represent 1 or 2;
- or a pharmaceutically acceptable salt thereof.

2. A compound of formula (I) as defined in claim 1 wherein R¹ represents -aryl optionally substituted by 1, 2 or 3 halogen, C₁₋₆ alkyl, polyhaloC₁₋₆ alkyl, C₁₋₆ alkoxy, polyhaloC₁₋₆ alkoxy, -COC₁₋₆ alkyl, -C(R¹⁵)=NOR¹⁶, -NR¹⁵COR¹⁶, -COC₁₋₆ alkyl-halogen, -COC₁₋₆ alkyl-cyano, cyano or C₁₋₆ alkoxycarbonyl groups;
- aryl-X-C₃₋₇ cycloalkyl;

- aryl-X-aryl;
 - aryl-X-heterocyclyl optionally substituted by 1, 2 or 3 halogen or oxo groups;
 - aryl-X-heteroaryl optionally substituted by a C₁₋₆ alkyl or aryl group;
 - heterocyclyl optionally substituted by 1, 2 or 3 C₁₋₆ alkyl or -COC₁₋₆ alkyl groups;
 - 5 heteroaryl optionally substituted by 1, 2 or 3 cyano, halogen, polyhaloC₁₋₆ alkyl, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₆ alkoxycarbonyl or -CONR¹⁵R¹⁶ groups;
 - heteroaryl-X-aryl optionally substituted by 1, 2 or 3 cyano or C₁₋₆ alkylsulfonyl groups;
 - heteroaryl-X-heterocyclyl; or
 - 10 -heteroaryl-X-heteroaryl.
3. A compound of formula (I) as defined in claim 2 wherein R¹ represents phenyl, naphthyl or indanone optionally substituted by 1, 2 or 3 halogen, C₁₋₆ alkyl, polyhaloC₁₋₆ alkyl, C₁₋₆ alkoxy, polyhaloC₁₋₆ alkoxy, -COC₁₋₆ alkyl, -C(R¹⁵)=NOR¹⁶, -
- 15 NR¹⁵COR¹⁶, -COC₁₋₆ alkyl-halogen, -COC₁₋₆ alkyl-cyano, cyano or C₁₋₆ alkoxycarbonyl groups;
- phenyl-CO-cyclopropyl or -phenyl-CO-cyclobutyl;
 - phenyl-thiazolyl, -phenyl-oxadiazolyl, -phenyl-pyrrolyl, -phenyl-oxazolyl or -phenyl-isoxazolyl optionally substituted by a C₁₋₆ alkyl or aryl group; or
 - 20 pyridyl, pyrimidyl, pyrazinyl, pyridazinyl, quinoliny, isoquinoliny or benzothiazolyl optionally substituted by 1, 2 or 3 cyano, halogen, polyhaloC₁₋₆ alkyl, C₁₋₆ alkyl, C₁₋₆ alkoxy, C₁₋₆ alkoxycarbonyl or -CONR¹⁵R¹⁶ groups.
4. A compound of formula (I) as defined in claim 3 wherein R¹ represents phenyl optionally substituted by 1, 2 or 3 halogen, polyhaloC₁₋₆ alkyl, -
- 25 NR¹⁵COR¹⁶, -COC₁₋₆ alkyl or cyano groups;
- phenyl-CO-cyclopropyl;
 - phenyl-oxadiazolyl or -phenyl-oxazolyl optionally substituted by a C₁₋₆ alkyl or aryl group; or
 - 30 pyridyl, pyrimidyl, pyrazinyl, pyridazinyl or quinoliny optionally substituted by 1, 2 or 3 halogen, polyhaloC₁₋₆ alkyl, C₁₋₆ alkyl or cyano groups.
5. A compound of formula (I) as defined in claim 4 wherein R¹ represents phenyl optionally substituted at the 4-position by a -COMe, -COEt or cyano
- 35 group; or
- pyridyl or quinoliny optionally substituted by a methyl or CF₃ group.
6. A compound of formula (I) as defined in claim 5 wherein R¹ represents -6-CF₃-pyridin-3-yl.
- 40
7. A compound of formula (I) as defined in any one of claims 1 to 6 wherein X represents a bond, O or CO.

8. A compound of formula (I) as defined in claim 7, wherein X represents a bond or CO.
- 5 9. A compound of formula (I) as defined in any one of claims 1 to 8 wherein m represents 0.
10. A compound of formula (I) as defined in any one of claims 1 to 9 wherein n represents 0, 1 or 2.
- 10 11. A compound of formula (I) as defined in claim 10 wherein n represents 0 or 1.
12. A compound of formula (I) as defined in claim 10 or claim 11 wherein R² represents methyl.
- 15 13. A compound of formula (I) as defined in claim 11 wherein n represents 0.
14. A compound of formula (I) as defined in any one of claims 1 to 13 wherein q represents 1.
- 20 15. A compound of formula (I) as defined in any one of claims 1 to 14 wherein R³ represents C₃₋₈ alkyl or C₃₋₈ cycloalkyl.
- 25 16. A compound of formula (I) as defined in claim 15 wherein R³ represents isopropyl, isobutyl or cyclobutyl.
17. A compound of formula (I) as defined in claim 16 wherein R³ represents isopropyl or cyclobutyl.
- 30 18. A compound of formula (I) as defined in claim 17 wherein R³ represents isopropyl.
19. A compound of formula (I) as defined in claim 1 which is a compound of E1-E198 or a pharmaceutically acceptable salt thereof.
- 35 20. A compound of formula (I) as defined in claim 1 which is
1-Isopropyl-4-[1-(5-cyano-pyridin-2-yl)-piperidine-4-carbonyl]-piperazine;
1-Isopropyl-4-[1-(5-methoxycarbonyl-4-trifluoromethylpyridin-2-yl)-piperidine-4-carbonyl]-
piperazine;
40 1-Isopropyl-4-[1-(4-ethoxycarbonylphenyl)-piperidine-4-carbonyl]-piperazine;
1-Cyclobutyl-4-[1-(4-cyanophenyl)-piperidine-4-carbonyl]-piperazine;
1-Cyclobutyl-4-[1-(4-cyano-3-fluorophenyl)-piperidine-4-carbonyl]-piperazine;

- 1-Cyclobutyl-4-[1-(4-cyano-2,6-difluorophenyl)-piperidine-4-carbonyl]-piperazine;
 1-Cyclobutyl-4-[1-(4-cyano-3-trifluoromethylphenyl)-piperidine-4-carbonyl]-piperazine;
 1-Cyclobutyl-4-[1-(4-cyano-naphthalen-1-yl)-piperidine-4-carbonyl]-piperazine;
 1-Cyclobutyl-4-[1-(5-cyanopyridin-2-yl)-piperidine-4-carbonyl]-piperazine;
 5 1-Cyclobutyl-4-[1-(6-trifluoromethylpyridin-2-yl)-piperidine-4-carbonyl]-piperazine;
 1-Cyclobutyl-4-[1-(5-trifluoromethylpyridin-2-yl)-piperidine-4-carbonyl]-piperazine;
 1-Cyclobutyl-4-[1-(3-chloro-5-trifluoromethylpyridin-2-yl)-piperidine-4-carbonyl]-
 piperazine;
 1-Isopropyl-4-[1-[5-(4-methylsulfonylphenyl)-pyrimidin-2-yl]-piperidine-4-carbonyl]-
 10 piperazine;
 1-Isopropyl-4-[1-[4-(morpholino-carbonyl)-phenyl]-piperidine-4-carbonyl]-piperazine;
 1-Cyclopentyl-4-[1-(4-cyano-phenyl)-piperidine-4-carbonyl]-piperazine;
 (2*R*,6*S*)-1-Cyclobutyl-4-[1-(4-cyanophenyl)-piperidine-4-carbonyl]-2,6-
 dimethylpiperazine;
 15 1-Isopentyl-4-[1-(5-cyano-pyridin-2-yl)-piperidine-4-carbonyl]-piperazine;
 1-Cyclobutyl-4-[1-(4-cyanophenyl)-piperidine-4-carbonyl]-[1,4]-diazepane;
 1-Cyclobutyl-4-[1-(5-cyanopyridin-2-yl)-piperidine-4-carbonyl]-[1,4]-diazepane;
 1-Isopropyl-4-[1-(4-cyano-2,5-difluorophenyl)-piperidine-4-carbonyl]-[1,4]-diazepane;
 1-Isopropyl-4-[1-(4-cyano-3-chlorophenyl)-piperidine-4-carbonyl]-[1,4]-diazepane;
 20 1-Isopropyl-4-[1-(4-cyano-3-fluoro-phenyl)-piperidine-4-carbonyl]-[1,4]-diazepane;
 1-Isopropyl-4-[1-(4-cyano-2,6-difluoro-phenyl)-piperidine-4-carbonyl]-[1,4]-diazepane;
 1-Isopropyl-4-[1-(4-cyano-2-fluoro-phenyl)-piperidine-4-carbonyl]-[1,4]-diazepane;
 1-Isopropyl-4-[1-(4-cyano-3-trifluoromethyl-phenyl)-piperidine-4-carbonyl]-[1,4]-
 diazepane;
 25 1-Isopropyl-4-[1-(4-trifluoromethyl-phenyl)-piperidine-4-carbonyl]-[1,4]-diazepane;
 1-Isopropyl-4-[1-(4-cyano-naphthalen-1-yl)-piperidine-4-carbonyl]-[1,4]-diazepane;
 1-Isopropyl-4-[1-(3,4-dichlorophenyl)-piperidine-4-carbonyl]-[1,4]-diazepane;
 1-Isopropyl-4-[1-(4-trifluoromethoxyphenyl)-piperidine-4-carbonyl]-[1,4]-diazepane;
 1-Isopropyl-4-[1-(4-difluoromethoxyphenyl)-piperidine-4-carbonyl]-[1,4]-diazepane;
 30 1-Isopropyl-4-[1-(4-phenoxyphenyl)-piperidine-4-carbonyl]-[1,4]-diazepane;
 1-Isopropyl-4-[1-(6-methoxypyridin-3-yl)-piperidine-4-carbonyl]-[1,4]-diazepane; 1-
 Isopropyl-4-[1-(4-cyano-2,3-difluorophenyl)-piperidine-4-carbonyl]-[1,4]-diazepane;
 1-Isopropyl-4-[1-(4-cyano-2-chlorophenyl)-piperidine-4-carbonyl]-[1,4]-diazepane;
 1-Cyclobutyl-4-[1-(4-cyano-2-chlorophenyl)-piperidine-4-carbonyl]-[1,4]-diazepane;
 35 1-Cyclobutyl-4-[1-(4-cyano-3-chlorophenyl)-piperidine-4-carbonyl]-[1,4]-diazepane;
 1-Cyclobutyl-4-[1-(4-cyano-3-fluorophenyl)-piperidine-4-carbonyl]-[1,4]-diazepane;
 1-Cyclobutyl-4-[1-(4-cyano-3-trifluoromethylphenyl)-piperidine-4-carbonyl]-[1,4]-
 diazepane;
 1-Cyclobutyl-4-[1-(4-cyano-2,5-difluorophenyl)-piperidine-4-carbonyl]-[1,4]-diazepane;
 40 (S)-1-Isopropyl-4-[1-(4-cyanophenyl)-piperidine-4-carbonyl]-2-methylpiperazine;
 (S)-1-Isopropyl-4-[1-(6-cyanopyridin-3-yl)-piperidine-4-carbonyl]-2-methyl piperazine;
 (S)-1-Isopropyl-4-[1-(5-cyanopyridin-2-yl)-piperidine-4-carbonyl]-2-methyl piperazine;

- (S)-1-Isopropyl-4-[1-(5-trifluoromethyl-pyrazin-2-yl)-piperidine-4-carbonyl]-2-methyl piperazine;
(S)-1-Isopropyl-4-[1-(6-trifluoromethyl-pyridazin-3-yl)-piperidine-4-carbonyl]-2-methyl piperazine;
5 1-Isopropyl-4-[1-[4-(5-phenyl-1,3,4-oxadiazol-2-yl)phenyl]-piperidine-4-carbonyl] piperazine;
1-Isopropyl-4-[1-(quinolin-6-yl)-piperidine-4-carbonyl] piperazine;
1-Cyclobutyl-4-[1-(6-trifluoromethylpyridin-3-yl)-piperidine-4-carbonyl] piperazine;
1-Isopropyl-4-[1-(5-trifluoromethyl-pyrazin-2-yl)-piperidine-4-carbonyl]-piperazine;
10 (S)-1-Isobutyl-4-[1-(4-cyanophenyl)-piperidine-4-carbonyl]-piperazine;
1-Isopropyl-4-[1-(4-cyclopropylcarbonylphenyl)-piperidine-4-carbonyl]-piperazine;
1-Isopropyl-4-[1-(2-methyl-quinolin-6-yl)-piperidine-4-carbonyl]-piperazine;
1-Isopropyl-4-[1-(6-cyano-pyridin-3-yl)-piperidine-4-carbonyl]-piperazine;
1-Cyclobutyl-4-[1-(6-trifluoromethylpyridin-3-yl)-piperidine-4-carbonyl]-[1,4]-diazepane;
15 1-Cyclobutyl-4-[1-(2-cyanopyridin-4-yl)-piperidine-4-carbonyl]-[1,4]-diazepane;
1-Isopropyl-4-[1-(6-trifluoromethylpyridazin-3-yl)-piperidine-4-carbonyl]-[1,4]-diazepane;
1-Isopropyl-4-[1-(5-trifluoromethylpyrazin-2-yl)-piperidine-4-carbonyl]-[1,4]-diazepane;
1-Isopropyl-4-[1-[4-(2-methyl-1,3-oxazol-5-yl)phenyl]-piperidine-4-carbonyl]-[1,4]-diazepane;
20 1-Isopropyl-4-[1-[4-(3-methyl-1,2,4-oxadiazol-5-yl)phenyl]-piperidine-4-carbonyl]-[1,4]-diazepane;
1-Isopropyl-4-[1-(4-acetamido-3-fluorophenyl)-piperidine-4-carbonyl]-[1,4]-diazepane;
1-Cyclobutyl-4-[1-(4-acetylphenyl)-piperidine-4-carbonyl]-[1,4]-diazepane;
1-Cyclobutyl-4-[1-(6-cyano-pyridin-3-yl)-piperidine-4-carbonyl]-[1,4]-diazepane;
25 1-Isopropyl-4-[1-(6-cyano-pyridin-3-yl)-piperidine-4-carbonyl]-[1,4]-diazepane;
1-Isopropyl-4-[1-(2-methyl-quinolin-4-yl)-piperidine-4-carbonyl]-[1,4]-diazepane;
1-Isopropyl-4-[1-[4-(3-methyl-1,2,4-oxadiazol-5-yl)phenyl]-piperidine-4-carbonyl]-piperazine;
1-Isopropyl-4-[1-(2-trifluoromethylpyrimidin-5-yl)-piperidine-4-carbonyl]-[1,4]-diazepane;
or a pharmaceutically acceptable salt thereof.
30
21. A compound of formula (I) as defined in claim 1 which is
1-Isopropyl-4-[1-(4-cyanophenyl)-piperidine-4-carbonyl]-piperazine;
1-Isopropyl-4-[1-(4-cyanophenyl)-piperidine-4-carbonyl]-[1,4]-diazepane;
(S)-1-Isopropyl-4-[1-(6-trifluoromethylpyridin-3-yl)-piperidine-4-carbonyl]-2-methyl
35 piperazine;
1-Isopropyl-4-[1-(4-acetylphenyl)-piperidine-4-carbonyl]-[1,4]-diazepane;
1-Isopropyl-4-[1-(4-propanoylphenyl)-piperidine-4-carbonyl]-[1,4]-diazepane;
or a pharmaceutically acceptable salt thereof.
- 40 22. A compound of formula (I) as defined in claim 1 which is
1-Isopropyl-4-[1-(6-trifluoromethylpyridin-3-yl)-piperidine-4-carbonyl]-piperazine;
1-Isopropyl-4-[1-(6-trifluoromethylpyridin-3-yl)-piperidine-4-carbonyl]-[1,4]-diazepane;

or a pharmaceutically acceptable salt thereof.

23. A pharmaceutical composition which comprises the compound of formula (I) as defined in any one of claims 1 to 22 or a pharmaceutically acceptable salt thereof and a pharmaceutically acceptable carrier or excipient.

24. A compound as defined in any one of claims 1 to 22 for use in therapy.

25. A compound as defined in any one of claims 1 to 22 for use in the treatment of neurological diseases.

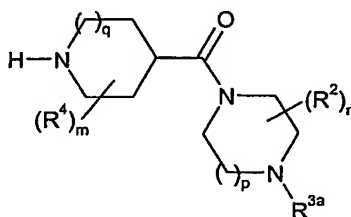
26. Use of a compound as defined in any one of claims 1 to 22 in the manufacture of a medicament for the treatment of neurological diseases.

27. A method of treatment of neurological diseases which comprises administering to a host in need thereof an effective amount of a compound of formula (I) as defined in any one of claims 1 to 22 or a pharmaceutically acceptable salt thereof.

28. A pharmaceutical composition for use in the treatment of neurological diseases which comprises the compound of formula (I) as defined in any one of claims 1 to 22 or a pharmaceutically acceptable salt thereof and a pharmaceutically acceptable carrier.

29. A process for the preparation of a compound of formula (I) or a pharmaceutically acceptable salt thereof, which process comprises:

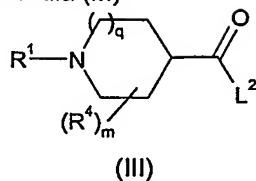
(a) reacting a compound of formula (II)



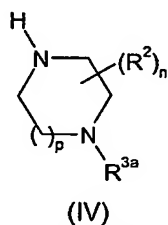
(II)

or an optionally activated or protected derivative thereof, wherein R^2 , R^4 , m , n , p and q are as defined in claim 1 and R^{3a} is as defined for R^3 in claim 1 or a group convertible to R^3 , with a compound of formula R^1-L^1 , wherein R^1 is as defined in claim 1 and L^1 represents a suitable leaving group, such as a halogen atom followed by a deprotection reaction as necessary; or

- (b) reacting a compound of formula (III)



- 5 wherein R¹, R⁴, m and q are as defined in claim 1 and L² represents OH or a suitable leaving group, such as a halogen atom, with a compound of formula (IV)



- 10 wherein R², n and p are as defined in claim 1 R³ᵃ is as defined for R³ in claim 1 or a group convertible to R³; or
- (c) deprotecting a compound of formula (I) or converting groups which are protected; and optionally thereafter
- 15 (d) interconversion to other compounds of formula (I).